Hellenic Journal of Cardiology (2016) 57, 167–168

Available online at www.sciencedirect.com

ScienceDirect

journal homepage: http://www.journals.elsevier.com/hellenic-journal-of-cardiology/

EDITORIAL

Current management and hospital outcome of the acute coronary syndromes

Primary percutaneous coronary intervention (pPCI) is the preferred reperfusion therapy for patients with an ST-segment elevation myocardial infarction (STEMI) when it is performed as soon as possible after the first medical contact.[1] The PCI reperfusion approach remains superior to immediate thrombolysis (TL), even when transfer to an angioplasty center is necessary.[2] Primary PCI is the preferred treatment for patients in shock and for the patients with contraindications to thrombolysis. By contrast, both the European Society of Cardiology (ESC) and ACC/AHA guidelines for patients with non-STEMI recommend an immediate invasive strategy within 2 h of presentation for very high-risk patients, an early invasive strategy within 24 h in high risk patients and an invasive strategy within 72 h in intermediate risk patients. Finally, both ESC and ACC/AHA also provide a 1A recommendation for the radial approach in experienced centers.[3]

Despite these advantages, data from several national registries and surveys indicate that the use of pPCI is not universally implemented, and thrombolysis is still used in many patients.[4] Furthermore, a large proportion of patients presenting with STEMI do not receive reperfusion therapy. A survey by Peter Widimisky in 2008 indicated that patient access to reperfusion therapy and the use of primary PCI or thrombolysis vary considerably between European countries. Northern, western and central Europeans countries use primary PCI for the majority of their STEMI patients. Southern Europe and the Balkans still predominantly use TL, and as a result, many patients are do not receive reperfusion therapy.[5]

Greece participated in this European survey and provided data from a large countrywide survey in the HELIOS study, which was published in 2007. The HELIOS survey showed a suboptimal pPCI implementation in Greece, which was also documented in the same period of time in another five European countries. The predominant reperfusion therapy was TL, and more importantly, 40% of STEMI patients did not receive reperfusion therapy.[6]

Considering both the above scientific evidence and variation in the existing practice patterns around Europe, the leadership of EuroPCR, EAPCI and ESC Working Group on Acute Cardiac – Care launched the "STENT FOR LIFE" (SFL) initiative.[7]

The SFL initiative has supported the implementation of timely pPCI to reduce the mortality and morbidity of patients suffering from ACS. Greece became a member of the SFL initiative in August 2009. In 2012, three years after participating in the SFL coalition, there was a threefold increase in the number of pPCI cases. This increase parallels a dramatic decrease (44%) in the no reperfusion therapy for STEMI. However, thrombolysis remains the predominant reperfusion therapy for STEMI patients.[8]

In this issue of Hellenic Journal of Cardiology, the same group of HELIOS investigators conducted the PHAETHON study to provide contemporary data on the ACS prevalence and management in Greece. According to the authors, the centers were selected on the basis of reliably representing and proportionally covering all geographical areas of Greece. The PHAETHON study selected PCI and non-PCI centers, academic and non-academic, as well as public and private hospitals from rural and urban areas in the country. The primary outcome of the study was an assessment of the epidemiological characteristics, care and in-hospital mortality of ACS patients in Greece.[9] Although the findings of the PHAETHON study are consistent with those of the STENT FOR LIFE initiative, the following points should be emphasized:

- As mentioned above, there was a clear increase in the number of primary PCI procedures in recent years in Greece. This progress in STEMI management was reconfirmed in the "PHAETHON" study, which showed similar and improved reperfusion rates with PPCI of 34% (39% underwent coronary angiogram), and 44.5% underwent fibrinolysis and only 16.5% did not receive reperfusion therapy. The most important finding from the

Peer review under responsibility of Hellenic Cardiological Society.

http://dx.doi.org/10.1016/j.hjc.2016.07.003

"PHAETHON" study is that the reperfusion strategy was used in the majority of the patients with STEMI (78.5%), while thrombolysis (TL) remains the dominant reperfusion therapy in STEMI patients (44.5%). The finding that only 16.5% did not receive reperfusion therapy is difficult to interpret and requires more clarification in new registries. The results of the Widimisky et al. study challenge the general impression that TL is more suitable for widespread use. The opposite appears to be true in countries using TL as the dominant strategy where reperfusion therapy is less commonly used for STEMI patients.[5]

- The patient delay is the time from symptom onset to the 1st medical contact. In the "PHAETHON" study, the patient delay was 163 min, which is comparable to that described in the stent for life initiative (140 min). The observations in those studies (Phaethon and SFL) are similar to the results in many European countries and highlight areas of public awareness and education that we must to improve. The "ACT NOW SAVE A LIFE" campaign is running in Greece and other European countries, and some preliminary results show improvement in patient delays.
- The in-hospital mortality found in PHAETHON study (1.63%) should be re-evaluated in larger registries with adequate power and should discriminate the mortality rate between the different ACS groups (STEMI-NSTEMI). Based on in a meta-analysis, primary PCI was more effective than fibrinolysis at reducing mortality, and this finding was reflected in the recommendations.[10] On the other hand, mortality might be affected by multiple unmeasured features of care, including the total ischemic time, differences in the operator experience and organizational measures.[11] In the last report of the reperfusion treatment in 37 ESC countries, the in-hospital mortality for STEMI patients treated with pPCI varied between 3.1 and 6.1%. However, the mortality data depend on the population that is studied and the methodologies for data collection. For example, the high mortality rate of cardiogenic shock (50%), which is not always reported in the registries, might impact the mortality rate.[12] As the authors comment, the low hospital mortality observed in the PHAETHON study (1.63%), might imply a small likelihood of selection bias and unreported or missed events.[9]
- Finally, the data from the hospital discharge and short follow-up are very important. The small, but substantial, percentage of patients with type 2 MI define a subgroup of STEMI patients who should be followed with strict secondary prevention instructions.
- In conclusion, the data from PHAETHON study, a multicenter observational survey, demonstrate striking progress in PPCI utilization and a high percentage of reperfusion therapy in Greece. Additionally, the survey demonstrates the need for systematic use of large registries to evaluate ACS patient care. A major challenge for improving reperfusion therapy and the prognosis of ACS patients in Greece is the lack of systematic, accurate data. In this field, the data from PHAETHON survey are very important. The findings of this study demonstrate an increase in pPCI utilization and high percentage of reperfusion therapy in Greece. It is time to turn our attention to the further development of ACS networks, system-based measures and improved organization of regional and national health systems.

References

1. Steg PG, James SK, Atar D, et al. ESC guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation: the Task Force on the management of ST-segment elevation acute myocardial infarction of the European Society of Cardiology (ESC). *Eur Heart J*. 2012;33:2569—2619.
2. Dalby M, Bouzamondo A, Lechat P, Montalescot C. Transfer for primary angioplasty versus immediate thrombolysis in acute myocardial infarction: a meta-analysis. *Circulation*. 2003;108:1809—1814.
3. Roffi M, Patrono C, Collet JP, et al. 2015 ESC Guidelines for the management of acute coronary syndromes in patients presenting without persistent ST-segment elevation. *Eur Heart J*. 2016;37:267—315.
4. Laut KG, Pedersen AB, Lash TL, Kristensen SD. Barriers to implementation of primary percutaneous coronary intervention in Europe. *Eur Cardiol*. 2011;7:108—112.
5. Widimsky P, Wijns W, Fajadet J, et al. Reperfusion therapy for ST elevation acute myocardial infarction in Europe: description of the current situation in 30 countries. *Eur Heart J*. 2010;31:943—957.
6. Andrikopoulos G, Pipilis A, Goudevenos J, et al. Epidemiological characteristics, management and early outcome of acute myocardial infarction in Greece: the HELilenic Infarction Observation Study. *Hellenic J Cardiol*. 2007;48:325—334.
7. Widimsky P, Fajadet J, Danchin N, Wijns W. 'Stent 4 Life' targeting PCI at all who will benefit the most. A joint project between EAPCI, Euro-PCR, EUCOMED and the ESC Working Group on Acute Cardiac Care. *Euro Intervention*. 2009;4:555,557.
8. Kanakakis J, Ntalianis A, Papaioannou G, et al. Stent for Life Initiative-the Greek experience. *Euro Intervention*. 2012;8(Suppl P):116—120.
9. Keeley EC, Boura JA, Grines CL. Primary angioplasty versus intravenous thrombolytic therapy for acute myocardial infarction: a quantitative review of 23 randomised trials. *Lancet*. 2003;361:13—20.
10. Andrikopoulos G, Terentes-Printios D, Tzeis S, et al. Epidemiological characteristics management and early outcome of acute coronary syndromes in Greece: the PHAETHON study. *Hellenic J Cardiol*. 2016;57:157—166.
11. Curry LA, Spatz E, Cherlin E, et al. What distinguishes top-performing hospitals in acute myocardial infarction mortality rates? A qualitative study. *Ann Intern Med*. 2011;154:384—390.
12. Kristensen ST, Laut KG, Fajadef J, et al. Reperfusion therapy for ST elevation acute myocardial infarction 2010/2011: current status in 37 ESC countries. *Eur Heart J*. 2014;35:1957—1970.

I. Kanakakis, MD
Department of Clinical Therapeutics, National and Kapodistrian University of Athens, Alexandra Hospital, Athens, Greece

E-mail address: jkanakakis@yahoo.gr

Available online 25 July 2016